

National Functional Guidelines Report #03

Lab CHEM(Chemtech Consulting Group) **SDG** MF4R39 **Case** 41344 **Contract** EPW09038 **Region** 6 **DDTID** 123021 **SOW** ISM01.2

Data Review Reports

Blanks

Blanks	ICP_MS
NCB01	The following samples have analyte results greater than or equal to MDLs but equal to CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are reported at CRQLs.
	MF4RB1, MF4RB0
	Chromium MF4RB1 , MF4RB0
Blanks	ICP_MS
NCB02	The following samples have analyte results greater than or equal to MDLs but equal to CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are reported at CRQLs.
	MF4RB1, MF4RB0
	Chromium MF4RB1 , MF4RB0
Blanks	ICP_MS
NCB06	The following samples have no detected analytes. The associated CCB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	MF4R60L, MF4RA6, MF4R46, MF4R57, MF4RB0, MF4RB1, MF4R58, MF4RB2, PBW, MF4R59, MF4R53, MF4R05, MF4R39, MF4R60, MF4R54, MF4R06, MF4R40, MF4R60D, MF4RA4
	Vanadium MF4R60L , MF4RA6 , MF4R46 , MF4R57 , MF4RB0 , MF4RB1 , MF4R58 , MF4RB2 , PBW , MF4R59 , MF4R53 , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4R60D , MF4RA4
	Potassium PBW
Blanks	ICP_MS
ND16	The following samples have analyte results greater than or equal to MDLs. The associated CCB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	MF4R60S, MF4R60L, MF4RA6, MF4R46, MF4R57, MF4RB0, MF4RB1, MF4R58, MF4RB2, MF4R59, MF4R53, MF4R05, MF4R39, MF4R60, MF4R54, MF4R06, MF4R40, MF4RA3, MF4R60D, MF4RA4, MF4R45, MF4RA5
	Vanadium MF4R60S
	Calcium MF4R60L , MF4RA6 , MF4R46 , MF4R57 , MF4RB0 , MF4RB1 , MF4R58 , MF4RB2 , MF4R59 , MF4R53 , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4RA3 , MF4R60D , MF4R60S , MF4RA4 , MF4R45 , MF4RA5
Blanks	ICP_MS
ND05	The following samples have analyte results greater than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	LCS, MF4RA3, MF4RA5, MF4R57, MF4R53, MF4R59, MF4R39, MF4R45, MF4R60S, MF4R58, MF4RB2, MF4R40, MF4RA4, MF4RA6, MF4R60L, MF4R46, MF4RB0, MF4RB1, MF4R05, MF4R60, MF4R54, MF4R06, MF4R60D
	Vanadium LCS , MF4RA3 , MF4RA5
	Arsenic MF4R57 , MF4R53 , MF4R59 , LCS , MF4R39 , MF4RA3 , MF4R45 , MF4R60S , MF4RA5
	Chromium MF4R57 , MF4R58 , MF4RB2 , MF4R53 , MF4R59 , LCS , MF4R39 , MF4R40 , MF4RA3 , MF4RA4 , MF4R45 , MF4R60S , MF4RA5 , MF4RA6

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Blanks

Blanks	ICP_MS
	Nickel MF4R57 , MF4R60S
	Potassium MF4R60L , MF4RA6 , MF4R46 , MF4R57 , MF4RB0 , MF4RB1 , MF4R58 , MF4RB2 , MF4R53 , LCS , MF4R59 , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4R60D , MF4RA3 , MF4R60S , MF4RA4 , MF4R45 , MF4RA5
	Copper MF4RA6 , MF4R46 , MF4RB1 , MF4RB0 , MF4RB2 , MF4R58 , MF4R53 , MF4R59 , LCS , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4RA3 , MF4R60D , MF4RA4 , MF4R45 , MF4R60S , MF4RA5
	Lead MF4RA6 , MF4R46 , MF4RB0 , MF4R58 , MF4R59 , LCS , MF4R39 , MF4R54 , MF4R40 , MF4RA3 , MF4R60S , MF4RA5
	Sodium MF4R60L , MF4RA6 , MF4R46 , MF4R57 , MF4RB0 , MF4RB1 , MF4R58 , MF4RB2 , LCS , MF4R59 , MF4R53 , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4RA3 , MF4R60D , MF4R60S , MF4RA4 , MF4R45 , MF4RA5
	Cobalt LCS , MF4R60S
	Barium MF4RB0 , MF4RB1 , MF4R57 , MF4R58 , MF4R53 , MF4RB2 , MF4R59 , MF4R05 , LCS , MF4R60 , MF4R54 , MF4R39 , MF4R06 , MF4R40 , MF4R60D , MF4RA3 , MF4R45 , MF4RA4 , MF4R60S , MF4RA5 , MF4R46 , MF4RA6
	Beryllium LCS , MF4R60S
	Zinc MF4R46 , MF4RA6 , MF4RB0 , MF4RB1 , MF4R58 , MF4RB2 , MF4R59 , MF4R53 , LCS , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4RA3 , MF4R60D , MF4RA4 , MF4R45 , MF4RA5
	Aluminum LCS
	Antimony LCS , MF4R60S
	Thallium LCS , MF4R60S
	Cadmium LCS , MF4R60S
	Magnesium MF4R60L , MF4RA6 , MF4R46 , MF4R57 , MF4RB0 , MF4RB1 , MF4RB2 , MF4R58 , MF4R59 , MF4R53 , LCS , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R40 , MF4R06 , MF4R60D , MF4RA3 , MF4R60S , MF4RA45 , MF4RA4 , MF4RA5
	Silver LCS , MF4R60S
	Iron MF4RA6 , MF4R46 , MF4RB1 , MF4R57 , MF4RB0 , MF4RB2 , MF4R58 , MF4R53 , MF4R59 , LCS , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4RA3 , MF4R60D , MF4RA4 , MF4R45 , MF4R60S , MF4RA5
	Manganese MF4RB0 , MF4R58 , MF4R53 , LCS , MF4R05 , MF4R54 , MF4R60S , MF4R45
Blanks	ICP_MS
ND04	The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated at CRQLs.
	MF4R45 , MF4RB0 , MF4R58 , MF4R05 , MF4R40 , MF4R60D , MF4RA4 , MF4R60L , MF4R46 , MF4R60 , MF4R54 , MF4R06 , MF4R57 , MF4RB1 , MF4RB2 , MF4R53 , MF4RA6 , MF4R59 , MF4R39 , MF4RA3 , MF4RA5
	Vanadium MF4R45
	Arsenic MF4RB0 , MF4R58 , MF4R05 , MF4R40 , MF4R60D , MF4RA4 , MF4R60L
	Chromium MF4R46 , MF4R05 , MF4R60 , MF4R54 , MF4R06 , MF4R60D , MF4R60L
	Nickel MF4R60L

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Blanks

Blanks	ICP_MS
	Copper MF4R57 , MF4R05 , MF4R60L
	Lead MF4RB1 , MF4RB2 , MF4R53 , MF4R05 , MF4R60 , MF4R06 , MF4R60D , MF4RA4 , MF4R45
	Barium MF4R60L
	Cobalt MF4R46 , MF4RA6 , MF4RB0 , MF4RB1 , MF4R58 , MF4RB2 , MF4R53 , MF4R59 , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4R60D , MF4RA3 , MF4RA4 , MF4R45 , MF4R60L , MF4RA5
	Beryllium MF4R46 , MF4R53 , MF4R45
	Zinc MF4R60L
	Aluminum MF4R57 , MF4R58 , MF4R53 , MF4RB2 , MF4R05 , MF4R60 , MF4R54 , MF4R39 , MF4R06 , MF4R40 , MF4RA3 , MF4R45 , MF4RA5 , MF4R46 , MF4RA6
	Antimony MF4R58 , MF4R53 , MF4R45 , MF4R46
	Thallium MF4R60L , MF4R53 , MF4R54 , MF4R45
	Cadmium MF4RB0 , MF4RB1 , MF4R58 , MF4R53 , MF4R54 , MF4R45 , MF4RA4
	Iron MF4R60L
	Silver MF4R53 , MF4R45
	Manganese MF4RA6 , MF4R46 , MF4R57 , MF4RB1 , MF4RB2 , MF4R59 , MF4R39 , MF4R60 , MF4R40 , MF4R06 , MF4R60D , MF4RA3 , MF4RA4 , MF4RA5
Blanks	ICP_MS
ND03	The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated to CRQLs.
	MF4R45 , MF4RB0 , MF4R58 , MF4R05 , MF4R40 , MF4R60D , MF4RA4 , MF4R60L , MF4R46 , MF4R60 , MF4R54 , MF4R06 , MF4R57 , MF4RB1 , MF4RB2 , MF4R53 , MF4R59 , MF4R39 , MF4RA3 , MF4RA5 , MF4RA6
	Vanadium MF4R45
	Arsenic MF4RB0 , MF4R58 , MF4R05 , MF4R40 , MF4R60D , MF4RA4 , MF4R60L
	Chromium MF4R46 , MF4R05 , MF4R60 , MF4R54 , MF4R06 , MF4R60D , MF4R60L
	Copper MF4R57 , MF4R05 , MF4R60L
	Lead MF4RB1 , MF4RB2 , MF4R53 , MF4R05 , MF4R60 , MF4R06 , MF4R60D , MF4RA4 , MF4R45
	Barium MF4R60L
	Cobalt MF4R46 , MF4RB0 , MF4RB1 , MF4R58 , MF4RB2 , MF4R53 , MF4R59 , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4R60D , MF4RA3 , MF4RA4 , MF4R45 , MF4R60L , MF4RA5 , MF4RA6
	Zinc MF4R60L
	Aluminum MF4R57 , MF4R58 , MF4R53 , MF4RB2 , MF4R05 , MF4R60 , MF4R54 , MF4R39 , MF4R06 , MF4R40 , MF4RA3 , MF4R45 , MF4RA5 , MF4R46 , MF4RA6

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Data Review Reports

Blanks

Blanks	ICP_MS
	Beryllium MF4R53 , MF4R45 , MF4R46
	Antimony MF4R58 , MF4R53 , MF4R45 , MF4R46
	Thallium MF4R60L , MF4R53 , MF4R54 , MF4R45
	Cadmium MF4RB0 , MF4RB1 , MF4R58 , MF4R53 , MF4R54 , MF4R45 , MF4RA4
	Iron MF4R60L
	Manganese MF4RA6 , MF4R46 , MF4R57 , MF4RB1 , MF4RB2 , MF4R59 , MF4R39 , MF4R60 , MF4R40 , MF4R06 , MF4R60D , MF4RA3 , MF4RA4 , MF4RA5
	Silver MF4R53 , MF4R45
Blanks	ICP_MS
ND06	The following samples have analyte results greater than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualified detected and nondetected analytes.
	LCS, MF4RA3, MF4RA5, MF4R57, MF4R53, MF4R59, MF4R39, MF4R45, MF4R60S, MF4R60L, MF4R58, MF4RB2, MF4R40, MF4RA4, MF4RA6, MF4R46, MF4RB0, MF4RB1, MF4R05, MF4R60, MF4R54, MF4R06, MF4R60D
	Vanadium LCS , MF4RA3 , MF4RA5
	Arsenic MF4R57 , MF4R53 , MF4R59 , LCS , MF4R39 , MF4RA3 , MF4R45 , MF4R60S , MF4RA5
	Calcium LCS , MF4R60L
	Chromium MF4R57 , MF4R58 , MF4RB2 , MF4R53 , MF4R59 , LCS , MF4R39 , MF4R40 , MF4RA3 , MF4RA4 , MF4R45 , MF4R60S , MF4R60L , MF4RA5 , MF4RA6
	Nickel MF4R60L , MF4RA6 , MF4R46 , MF4RB0 , MF4RB1 , MF4R58 , MF4RB2 , MF4R53 , LCS , MF4R59 , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4R60D , MF4RA3 , MF4RA4 , MF4R45 , MF4RA5
	Potassium MF4R60L , MF4RA6 , MF4R46 , MF4R57 , MF4RB0 , MF4RB1 , MF4R58 , MF4RB2 , MF4R53 , LCS , MF4R59 , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4R60D , MF4RA3 , MF4R60S , MF4RA4 , MF4R45 , MF4RA5
	Copper MF4RA6 , MF4R46 , MF4RB1 , MF4RB0 , MF4RB2 , MF4R58 , MF4R53 , MF4R59 , LCS , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4RA3 , MF4R60D , MF4RA4 , MF4R45 , MF4R60S , MF4RA5 , MF4R60L
	Lead MF4RA6 , MF4R46 , MF4RB0 , MF4R58 , MF4R59 , LCS , MF4R39 , MF4R54 , MF4R40 , MF4RA3 , MF4R60S , MF4RA5
	Sodium MF4R60L , MF4RA6 , MF4R46 , MF4R57 , MF4RB0 , MF4RB1 , MF4RB2 , MF4R58 , LCS , MF4R59 , MF4R53 , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4RA3 , MF4R60D , MF4R60S , MF4RA4 , MF4R45 , MF4RA5
	Cobalt LCS , MF4R60S
	Barium MF4RB0 , MF4RB1 , MF4R57 , MF4R58 , MF4R53 , MF4RB2 , MF4R59 , MF4R05 , LCS , MF4R60 , MF4R54 , MF4R39 , MF4R06 , MF4R40 , MF4R60D , MF4RA3 , MF4R45 , MF4RA4 , MF4R60S , MF4R60L , MF4RA5 , MF4R46 , MF4RA6
	Beryllium LCS , MF4R60S
	Aluminum LCS
	Antimony LCS , MF4R60S
	Thallium LCS , MF4R60S

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Data Review Reports

Blanks

Blanks	ICP_MS
	Cadmium LCS , MF4R60S
	Magnesium MF4R60L , MF4RA6 , MF4R46 , MF4R57 , MF4RB0 , MF4RB1 , MF4R58 , MF4RB2 , MF4R59 , MF4R53 , LCS , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R40 , MF4R06 , MF4R60D , MF4RA3 , MF4R60S , MF4R45 , MF4RA4 , MF4RA5
	Silver LCS , MF4R60S
	Iron MF4RA6 , MF4R46 , MF4RB1 , MF4R57 , MF4RB0 , MF4RB2 , MF4R58 , MF4R53 , MF4R59 , LCS , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4RA3 , MF4R60D , MF4RA4 , MF4R45 , MF4R60S , MF4RA5 , MF4R60L
	Manganese MF4R57 , MF4RB0 , MF4R58 , MF4R53 , LCS , MF4R05 , MF4R54 , MF4R60S , MF4R45
Blanks	ICP_MS
ND15	The following samples have analyte results greater than or equal to MDLs. The associated ICB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	MF4R60L , MF4RA6 , MF4R46 , MF4R57 , MF4RB0 , MF4RB1 , MF4R58 , MF4RB2 , MF4R59 , MF4R53 , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4RA3 , MF4R60D , MF4R60S , MF4RA4 , MF4R45 , MF4RA5
	Calcium MF4R60L , MF4RA6 , MF4R46 , MF4R57 , MF4RB0 , MF4RB1 , MF4R58 , MF4RB2 , MF4R59 , MF4R53 , MF4R05 , MF4R39 , MF4R60 , MF4R54 , MF4R06 , MF4R40 , MF4RA3 , MF4R60D , MF4R60S , MF4RA4 , MF4R45 , MF4RA5

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Data Review Reports

Detection Limit

Detection Limit	ICP_MS
NDL1	The following samples have results greater than or equal to MDLs but less than CRQLs. Detected analytes are qualified J.
	MF4R45, MF4R60L, MF4RB0, MF4R58, MF4R05, MF4R40, MF4R60D, MF4RA4, MF4R46, MF4R60, MF4R54, MF4R06, MF4R57, MF4RB1, MF4RB2, MF4R53, MF4RA6, MF4R59, MF4R39, MF4RA3, MF4RA5
	Vanadium MF4R45
	Arsenic MF4R60L, MF4RB0, MF4R58, MF4R05, MF4R40, MF4R60D, MF4RA4
	Chromium MF4R60L, MF4R46, MF4R05, MF4R60, MF4R54, MF4R06, MF4R60D
	Nickel MF4R60L
	Copper MF4R60L, MF4R57, MF4R05
	Lead MF4RB1, MF4RB2, MF4R53, MF4R05, MF4R60, MF4R06, MF4R60D, MF4RA4, MF4R45
	Barium MF4R60L
	Cobalt MF4R60L, MF4RA6, MF4R46, MF4RB0, MF4RB1, MF4R58, MF4RB2, MF4R59, MF4R53, MF4R05, MF4R39, MF4R60, MF4R54, MF4R06, MF4R40, MF4RA3, MF4R60D, MF4RA4, MF4R45, MF4RA5
	Aluminum MF4R46, MF4RA6, MF4R57, MF4R58, MF4RB2, MF4R53, MF4R05, MF4R39, MF4R60, MF4R54, MF4R06, MF4R40, MF4RA3, MF4R45, MF4RA5
	Zinc MF4R60L
	Beryllium MF4R46, MF4R53, MF4R45
	Antimony MF4R46, MF4R58, MF4R53, MF4R45
	Cadmium MF4RB0, MF4RB1, MF4R58, MF4R53, MF4R54, MF4RA4, MF4R45
	Thallium MF4R60L, MF4R53, MF4R54, MF4R45
	Silver MF4R53, MF4R45
	Iron MF4R60L
	Manganese MF4RA6, MF4R46, MF4R57, MF4RB1, MF4RB2, MF4R59, MF4R39, MF4R60, MF4R06, MF4R40, MF4RA3, MF4R60D, MF4RA4, MF4RA5

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Data Review Reports

Matrix Spikes

Matrix Spikes	ICP_MS
NG09	The following Matrix Spike samples have percent recoveries in the range of 30-74% and there are no post-digestion spike samples performed. Detected analytes with results greater than or equal to MDLs are qualified J-. Nondetected analytes are qualified UJ. MF4R39, MF4R40, MF4R45, MF4R46, MF4R57, MF4R58, MF4R59, MF4R60, MF4RB0, MF4R53, MF4R54, MF4RA3, MF4RA4, MF4RA5, MF4RA6, MF4RB1, MF4RB2, MF4R05, MF4R06
	Chromium MF4R60S

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Data Review Reports

Serial Dilution

Serial Dilution	ICP_MS
NL032	The following ICP-MS Serial Dilution (SD) samples have percent difference (%D) greater than 10% and initial sample results are greater than 50xMDLs. The detected analytes in samples with results greater than or equal to MDLs are qualified J. Nondetected analytes in samples are qualified UJ. MF4R39, MF4R40, MF4R45, MF4R46, MF4R57, MF4R58, MF4R59, MF4R60, MF4RB0, MF4R53, MF4R54, MF4RA3, MF4RA4, MF4RA5, MF4RA6, MF4RB1, MF4RB2, MF4R05, MF4R06 Calcium MF4R60L